

(12) **United States Patent**
Karanikos

(10) **Patent No.:** **US 9,901,147 B1**
(45) **Date of Patent:** **Feb. 27, 2018**

(54) **CASE FOR WEARABLE ELECTRONIC DEVICE**

(71) Applicant: **Apple Inc.**, Cupertino, CA (US)

(72) Inventor: **Demetrios B. Karanikos**, San Francisco, CA (US)

(73) Assignee: **Apple Inc.**, Cupertino, CA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **15/616,631**

(22) Filed: **Jun. 7, 2017**

(51) **Int. Cl.**

A45C 15/00 (2006.01)

A44C 5/00 (2006.01)

H05K 5/02 (2006.01)

B65D 25/10 (2006.01)

A44C 5/14 (2006.01)

F16B 1/00 (2006.01)

H02J 7/02 (2016.01)

(52) **U.S. Cl.**

CPC **A44C 5/0015** (2013.01); **A44C 5/14** (2013.01); **B65D 25/10** (2013.01); **F16B 1/00** (2013.01); **H05K 5/0204** (2013.01); **H05K 5/0226** (2013.01); **F16B 2001/0035** (2013.01); **H02J 7/025** (2013.01)

(58) **Field of Classification Search**

CPC **A44C 5/14**; **A45C 2011/002**; **A45C 2011/003**; **A45C 2013/025**; **A45F 5/00**; **B65D 25/10**; **G06F 1/1628**
USPC **206/38**, **301**, **320**, **477**, **480**, **560**, **564**, **206/565**, **818**
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

1,615,324 A * 1/1927 Bulova A47F 7/03
206/301
3,365,056 A * 1/1968 Mandel B65D 75/32
206/301
3,918,577 A * 11/1975 Horzick B65D 85/40
206/216
4,094,409 A * 6/1978 Spranger A47F 7/022
206/301
4,650,077 A * 3/1987 Droz A47F 7/022
206/480
5,901,846 A * 5/1999 Betcher B25H 3/02
206/349
5,927,507 A * 7/1999 Shelton B65D 25/101
206/301

(Continued)

Primary Examiner — Luan K Bui

(74) Attorney, Agent, or Firm — Kilpatrick Townsend & Stockton LLP

(57) **ABSTRACT**

A case for a wrist-worn electronic device and one or more bands that can be attached to a wrist-worn electronic device. The case can include first and second housing members foldably coupled together by one or more hinges between an open position and a closed position; a recess formed in one of the housing members that is sized and shaped to hold the one or more bands within the case; and an attachment mechanism positioned within the cavity. The attachment mechanism can include a piston having a cam profile at a first end and slidably coupled to one of the housing members between a first piston position and a second piston position, and a first magnet mechanically coupled to the piston near a second end, opposite the first end. The case can further include a second magnet positioned within the second housing member and spaced apart from the first magnet, wherein the first and second magnets are aligned to repel each other biasing the piston in the first piston position.

20 Claims, 5 Drawing Sheets

